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Appl. No.: 10/525,903

Amdt. Dated February 2, 2007

Response to Office Action Mailed November 3, 2006

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in this application.

1. (Cancelled).

2. (Currently Amended) ~~The optical modulator according to claim 1, wherein~~ An optical waveguide element comprising

a substrate comprised of a material having a photorefractive effect, and

an optical waveguide formed on said substrate, into which light is input by a CW laser,

wherein stray light rejection means for suppressing a photorefractive phenomenon in the optical waveguide due to interference of light passing through said optical waveguide and stray light is provided on a surface of said substrate, and

said stray light rejection means comprises a stray light rejection groove, which is formed on the surface of said substrate, and at least one part of which is formed adjacent to said optical waveguide.

3. (Currently Amended) ~~The optical modulator~~ waveguide element according to claim 2, wherein a distance between said stray light rejection groove and said optical waveguide is 10 to 100 μm at closest.

4. (Currently Amended) The optical ~~modulator~~ waveguide element according to claim 2, wherein depth of said stray light rejection groove is almost the same as or is more than depth of said optical waveguide.

5. (Currently Amended) The optical ~~modulator~~ waveguide element according to claim 2, wherein said stray light rejection groove is filled with a light absorbing material.

6-7. (Cancelled).

8. (Currently Amended) An optical ~~modulator~~ waveguide element comprising a substrate comprised of a material having ~~an electro-optic~~ photorefractive effect, and an optical waveguide formed on said substrate, and into which light is input by a CW laser,

~~a modulating electrode for allowing an electric field to work on said optical waveguide, and changing a phase of light passing through said optical waveguide,~~

wherein stray light rejection means for suppressing a photorefractive phenomenon in the optical waveguide due to interference of light passing through said optical waveguide and stray light is provided, and

said light rejection means comprises a low refractive index area with a refractive index lower than that of said substrate is provided such that the low refractive index area surrounds at one portion of adjacent spaces comprising at least a lower portion and a side portion of said optical waveguide in order to prevent stray light from entering the optical waveguide.

9. (Currently Amended) The optical ~~modulator~~ waveguide element according to claim 8, wherein

said low refractive index area has a thickness greater than a depth of said optical waveguide in a thickness direction of the substrate from a surface of said substrate, and

a refractive index between a deepest part of said low refractive index area and a reverse face of said substrate is higher than the refractive index of said low refractive index area.

10. (Currently Amended) The optical ~~modulator~~ waveguide element according to claim 8, wherein said low refractive index area is formed by diffusion of a low refractive index material having a refractive index lower than that of said substrate, over said substrate.

11. (Currently Amended) The optical ~~modulator~~ waveguide element according to claim 10, wherein said low refractive index area comprises MgO or ZnO as the low refractive index material.

12. (Cancelled).

13. (Currently Amended) The optical ~~modulator~~ waveguide element according to ~~claim 1~~, claim 2, wherein antireflection treatment is given on a reverse face or a side face of said substrate.

14. (Cancelled).

15. (Currently Amended) The optical ~~modulator~~ waveguide element according to ~~claim 1~~, claim 2, wherein input power of light input into said optical ~~modulator~~ waveguide element is more than 10mW.

16. (Currently Amended) The optical ~~modulator~~ waveguide element according to claim 3, wherein depth of said stray light rejection groove is almost the same as or is more than depth of said optical waveguide.

17. (Currently Amended) The optical ~~modulator~~ waveguide element according to claim 3, wherein said stray light rejection groove is filled with a light absorbing material.

18. (Currently Amended) The optical ~~modulator~~ waveguide element according to claim 8, wherein antireflection treatment is given on a reverse face or a side face of said substrate.

19. (Cancelled).

20. (Currently Amended) The optical ~~modulator~~ waveguide element according to claim 8, wherein input power of light input into said optical ~~modulator~~ waveguide element is more than 10mW.

21-22. (Cancelled).

23. (New) The optical waveguide element according to claim 2, wherein at least one part of said stray light rejection means is disposed in such position that stray light from an input end of said optical waveguide element is blocked from entering said optical waveguide.

24. (New) The optical waveguide element according to claim 2, wherein at least one part of said stray light rejection means is disposed in such position that stray light from a branching point of a branching optical waveguide of said optical waveguide element is blocked from entering said optical waveguide.

25. (New) The optical waveguide element according to claim 2, wherein at least one part of said stray light rejection means is disposed in such position that stray light reflecting from a side face of the substrate of said optical waveguide element is blocked from entering said optical waveguide.

26. (New) The optical waveguide element according to claim 2, wherein the optical waveguide comprises a branching point.

27. (New) The optical waveguide element according to claim 8, wherein the optical waveguide comprises a branching point.